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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/665,308	09/19/2000	Rebecca E. Cahoon	BB1149 US NA	5536

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LEGAL PATENT RECORDS CENTER  
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WILMINGTON, DE 19805

EXAMINER

COLLINS, CYNTHIA E

ART UNIT PAPER NUMBER

1638

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/665,308	<b>Applicant(s)</b> CAHOON ET AL.	
	<b>Examiner</b> Cynthia Collins	<b>Art Unit</b> 1638	

**-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on July 7, 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 94-105 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 94-105 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

The Amendment filed July 7, 2003, has been entered.

Claims ~~94~~-105 are pending and are examined.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

All previous objections and rejections not set forth below have been withdrawn.

### ***Claim Rejections - 35 USC § 112***

Claims 91-105 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention, for the reasons of record set forth in the office action mailed January 2, 2003.

Applicant's arguments filed July 7, 2003, have been fully considered but they are not persuasive.

Applicants argue that a representative number of polynucleotides encoding a polypeptide having cyclin delta activity and 80% sequence identity to SEQ ID NO:12 are disclosed. Applicants point to page 6 of the specification as disclosing alterations in the nucleotide sequence that are not expected to alter functionality, as well as Table 4 which discloses the results of a BLASTX analysis comparing SEQ ID NO:12 and the *Arabidopsis* cyclin-delta-1 (reply pages 6-7).

The Examiner maintains that the specification does not disclose a representative number of polynucleotides encoding a polypeptide having cyclin delta activity and 80%

sequence identity to SEQ ID NO:12 because the specification does not disclose even one sequence species that has 80% amino acid sequence identity to SEQ ID NO:12.

Furthermore, <sup>P</sup>age 6 of the specification does not disclose the identity of any particular nucleotide or amino acid residue the alteration of which could be critical to cyclin delta function. Additionally, Table 4 does not disclose the existence of amino acid sequence homology between SEQ ID NO:12 and the *Arabidopsis* cyclin-delta-1 in any cyclin delta domain known to be critical to cyclin delta function.

***Claim Rejections - 35 USC § 101 and 35 USC § 112***

Claims 91-105 remain rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility, for the reasons of record set forth in the office action mailed January 2, 2003.

Claims 91-105 also remain rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention, for the reasons of record set forth in the office action mailed January 2, 2003.

Applicant's arguments filed July 7, 2003, have been fully considered but they are not persuasive.

Applicants point to the BLASTX analysis submitted as Appendix A, which is indicative of the results shown in Table 4 of the specification. Applicants point out the improbability of the sequence similarity having occurred by chance, that SEQ ID NO:12

and the *Arabidopsis* cyclin-delta-1 (SEQ ID NO:30) have high sequence identity (77%) in their central region as compared to the amino and carboxy termini, and that a conserved Rb-binding domain (L-X-C-X-E) is present in SEQ ID NO:12. Applicants argue that in view of the foregoing that one skilled in the art would expect SEQ ID NO:12 to represent a functional cyclin delta-1 protein. Applicants additionally note that SEQ ID NO:12 should represent a functional cyclin delta protein even in light of additional data obtained after the filing date, as the data indicate sequence discrepancies in the amino and carboxy terminal regions of the protein, which would not be expected to affect functionality (reply pages 5-6).

The Examiner maintains that the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility as Applicants have not established that SEQ ID NO:12 or any protein having 80% or more amino acid sequence identity to SEQ ID NO: 12 would encode a functional cyclin delta protein. The Examiner does not question that the overall amino acid sequence of SEQ ID NO:12 resembles the amino acid sequence of delta cyclins, but rather questions whether there is sufficient homology between the functional domains of delta cyclins and SEQ ID NO:12 for one skilled in the art to infer that SEQ ID NO:12 is a functional delta cyclin protein. The Examiner also does not dispute that the conserved Rb-binding domain (L-X-C-X-E) present in SEQ ID NO:12 is characteristic of delta cyclins, but maintains that conservation of the Rb-binding domain alone is not a sufficient indicator of delta cyclin protein function, as all cyclins initially function by binding to and activating specific cyclin-dependent kinases.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Results***

No claim is allowed

Claims 91-105 are deemed free of the prior art due to the failure of the prior art to teach or suggest a nucleotide sequence of SEQ ID NO:11 or an amino acid sequence of SEQ ID NO:12.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (703) 605-1210. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone numbers for

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the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

CC  
September 23, 2003

DAVID T. FOX  
PRIMARY EXAMINER  
GROUP 180-1638

A handwritten signature in black ink, appearing to read "David T. Fox", written over the printed name and title.